hydrobiologia

volume 295, nos. 1–3, 1995

Asia–Pacific Symposium on Mangrove Ecosystems

Proceedings of the International Conference held at The Hong Kong University of Science & Technology, September 1–3, 1993

Guest Editors:
Yuk-Shan Wong &
Nora F.Y. Tam

Hydrobiologia publishes original articles in the fields of fundamental limnology and marine biology.

The scope of the journal is wide and includes ecology, physiology, biogeography, methodology and taxonomy. Applied (technological) papers should be of general, not solely technical interest. Very long papers and review papers will be printed on invitation only. Proceedings of specialized symposia may also be accepted for publication, if the scientific standard set by the journal is met.

Editorial policy. All papers submitted will be considered for publication. They will be evaluated by the editors and referees on the basis of their data and ideas, which should be of more than regional significance. For example, local faunal lists, or chemical 'inventories' of waters not supplemented by interpretations of a more general nature are not acceptable.

Papers should be submitted with the understanding that they are unpublished, and not printed, submitted or accepted for publication elsewhere.

Photocopying. *In the U.S.A.*: This journal is registered at the Copyright Clearance Center, Inc., 222 Rosewood Drive, Danvers, MA 01923.
Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by Kluwer Academic Publishers for users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the fee of USD 7.00 per copy is paid directly to CCC. For those organizations that have been granted a photocopy licence by CCC, a separate system of payment has been arranged. The fee code for users of the Transactional Reporting Service is 0018–8158/95/USD 7.00.
Authorization does not extend to other kinds of copying, such as that for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale.
In the rest of the world: Permission to photocopy must be obtained from the copyright owner. Please apply to Kluwer Academic Publishers, P.O. Box 17, 3300 AA Dordrecht, The Netherlands.

Hydrobiologia is published weekly.
Subscription price (1994–1995, 23 volumes of 3 issues): USD 4776.00 including postage and handling.
Second-class postage paid at Rahway, N.J. USPS No. 568–290.
U.S. Mailing Agent: Mercury Airfreight International Ltd., 2323 Randolph Ave., Avenel, N.J. 07001.
Published by Kluwer Academic Publishers, Spuiboulevard 50, P.O. Box 17, 3300 AA Dordrecht, The Netherlands, and 101 Philip Drive, Norwell, MA 02061, U.S.A.
Postmaster: Please send all address corrections to: *Hydrobiologia*, c/o Mercury Airfreight International Ltd., 2323 Randolph Ave., Avenel, NJ 07001, U.S.A.

Printed on acid-free paper

Contents

Preface ix
Thermo-osmotic gas supply not detected in *Avicennia marina* seedlings
by N.J. Skelton & W.G. Allaway 1
There is a continuum of gas space in young plants of *Avicennia marina*
by A.E. Ashford & W.G. Allaway 5
Diurnal gas exchange characteristics and water use efficiency of three salt-secreting mangroves at low and high salinities
by G. Naidoo & D.J. von Willert 13
Ventilation and respiration in roots of one-year-old seedlings of grey mangrove *Avicennia marina* (Forsk.) Vierh.
by M.J. Hovenden, M. Curran, M.A. Cole, PF.E. Goulter, N.J. Skelton & W.G. Allaway . 23
Transport of sediment in mangrove swamps
by E. Wolanski 31
Mangroves and climate change in the Florida and Caribbean region: scenarios and hypotheses
by S.C. Snedaker 43
Tidal asymmetry in mangrove creeks
by Y. Mazda, N. Kanazawa & E. Wolanski 51
Ecographic variation in *Kandelia candel* from Brunei, Hong Kong and Thailand
by G.S. Maxwell 59
Microgeographic genetic structure of the fiddler crab, *Uca arcuata* De Haan (Ocypodidae) in Taiwan
by S. Huang & J-T. Shih 67
Impact of expected climate change on mangroves
by C.D. Field 75
The population dynamics of the mangrove *Avicennia marina*; demographic synthesis and predictive modelling
by P.J. Clarke 83
Lower marine fungi (labyrinthulomycetes) and the decay of mangrove leaf litter
by G.B. Bremer 89
Frequency of occurrence of fungi on wood in Malaysian mangroves
by S.A. Alias, A.J. Kuthubutheen & E.B.G. Jones 97
Ecology of mangrove fungi and their role in nutrient cycling: what gaps occur in our knowledge?
by K.D. Hyde & S.Y. Lee 107
Observations on vertical distribution of fungi associated with standing senescent *Acanthus ilicifolius* stems at Mai Po Mangrove, Hong Kong
by R.B. Sadaba, L.L.P. Vrijmoed, E.B.G. Jones & I.J. Hodgkiss 119
Substrate type and microbial interactions as factors affecting asocarp formation by mangrove fungi
by T.K. Tan, C.L. Teng & E.B.G. Jones 127
Continental scale patterns in mangrove litter fall
by J.S. Bunt 135

The growth performances of two mangrove crabs, *Chiromanthes bidens* and *Parasesarma plicata* under different leaf litter diets
by P.W. Kwok & S.Y. Lee 141
Nutrients and heavy metal contamination of plants and sediments in Futian mangrove forest
by N.F.Y. Tam, S.H. Li, C.Y. Lan, G.Z. Chen, M.S. Li & Y.S. Wong 149
Forest structure and biomass of mangroves in the Mgeni estuary, South Africa
by T.D. Steinke, C.J. Ward & A. Rajh 159
Genetic diversity, distributional barriers and rafting continents – more thoughts on the evolution of mangroves
by N.C. Duke 167
Temporal distribution and abundance of shrimp postlarvae and juveniles in the mangroves of Muthupet, Tamilnadu, India
by R. Mohan, V. Selvam & J. Azariah 183
Community structure and standing crop biomass of a mangrove forest in Futian Nature Reserve, Shenzhen, China
by N.F.Y. Tam, Y.S. Wong, C.Y. Lan & G.Z. Chen 193
Mangrove outwelling: a review
by S.Y. Lee 203
An ecological study on the Mollusca in mangrove areas in the estuary of the Jiulong River
by J.X. Jiang & R.G. Li 213
The temporal changes in benthic abundances and sediment nutrients in a mudflat of the Chuwei Mangrove Forest, Taiwan
by C.I-Jiunn 221
Mangrove soils as sinks for wastewater-borne pollutants
by N.F.Y. Tam & Y. S. Wong 231
Effect of wastewater discharge on nutrient contamination of mangrove soils and plants
by Y.S. Wong, C.Y. Lan, G.Z. Chen, S.H. Li, X.R. Chen, Z.P. Liu & N.F.Y. Tam 243
The use of demographic studies in mangrove silviculture
by G.W. Khoon & O.J. Eong 255
Effect of synthetic wastewater on young *Kandelia candel* plants growing under greenhouse conditions
by G.Z. Chen, S.Y. Miao, N.F.Y. Tam, Y.S. Wong, S.H. Li & C.Y. Lan 263
Spatial and temporal variations of mangrove fish assemblages in Martinique (French West Indies)
by M. Louis, C. Bouchon & Y. Bouchon-Navaro 275
An integrated comparative approach to mangrove vegetation mapping using advanced remote sensing and GIS technologies: preliminary results
by J. Aschbacher, R. Ofren, J-P. Delsol, T.B. Suselo, S. Vibulsresth & T. Charrupat 285
Diel activity patterns in *Metapenaeus* and *Penaeus* juveniles
by J.H. Primavera & J. Lebata 295
Mangroves and brackishwater pond culture in the Phillippines
by J.H. Primavera 303
Mangroves as filters of shrimp pond effluent: predictions and biogeochemical research needs
by A.I. Robertson & M.J. Phillips 311

Conservation evaluation of nine Hong Kong mangals
by M.W. Yipp, C.H. Hau & G. Walthew 323
The distribution of mangrove-associated gastropod snails in Hong Kong
by G. Walthew 335
The ecology of mangrove conservation & management
by O. Jin-Eong 343
An initial assessment of mangrove resources and human activities at Mahout Island, Arabian Sea, Oman
by M.M. Fouda & M. Al-Muharrami 353